

a capacitance and a load coupled to a first electrode of said pair of electrodes, said capacitance configured to store charge, which is discharged through the electrodes, and the load configured to dissipate energy transmitted through it as a result of a discharge in the gas discharge area.

3. (Amended) The circuit of claim 2 wherein said resistor has a value comparable to a wave impedance of a gas discharge electrical loop.

9. (Amended) The circuit of claim 1 wherein said gas discharge area is configured to provide ionization of a laser gas during the charging of said capacitance.

16. (Amended) A discharge circuit, comprising:
a pair of discharge electrodes, a region between said pair of electrodes defining a gas discharge region;
a peaking capacitor and a resistor coupled to said pair of discharge electrodes, said peaking capacitor configured to store charge which is discharged through the discharge electrodes, said resistor configured to dissipate energy transmitted through it as a result of a discharge in the gas discharge area; and
a ground terminal coupled to said peaking capacitor and a second electrode of said pair of discharge electrodes;
wherein said pair of discharge electrodes, said peaking capacitor and said resistor form an electrical loop.

18. (Amended) The circuit of claim 16 further including a high voltage pulsed generator configured to provide power to said peaking capacitor.

21. (Amended) A discharge circuit for use in a laser system, comprising:
a pair of discharge electrodes, an area between said pair of electrodes defining a gas discharge area;
a first peaking capacitance coupled to said electrodes, said first capacitor configured to store charge;

Sub B
A6

a second peaking capacitance different from said first peaking capacitance and a resistor coupled to one of said pair of electrodes, said second capacitor configured to store charge which is discharged through the discharge electrodes, said resistor configured to dissipate energy transmitted through it as a result of a discharge in the gas discharge area; and

a ground terminal coupled to said first and second peaking capacitors;

wherein said pair of discharge electrodes, said first and second peaking capacitors and said resistor form an electrical loop.

A7

25. (Amended) A method of providing a discharge circuit for a pulsed gas laser system, comprising the steps of:

providing a pair of electrodes with a gas discharge area between the electrodes;
coupling a capacitance and a load to one of said pair of electrodes, said capacitance configured to store charge which is discharged through the electrodes, and the load configured to dissipate energy transmitted through it as a result of a discharge in the gas discharge area.

A8

27. (Amended) The method of claim 26 wherein said resistor has a value comparable to a wave impedance of a gas discharge electrical loop.

A9

37. (Amended) A method of providing a discharge circuit, comprising the steps of:
defining an area between a pair of electrodes a gas discharge area;
coupling a peaking capacitor and a resistor to one of said pair of discharge electrodes, said peaking capacitor configured to store charge which is discharged through the discharge electrodes, and the load configured to dissipate energy transmitted through it as a result of a discharge in the gas discharge area; and
coupling a ground terminal to said peaking capacitor and said one of said pair of discharge electrodes;
wherein said pair of discharge electrodes, said peaking capacitor and said resistor form an electrical loop.

38. (Amended) A method of providing a discharge circuit for use in a laser system, comprising the steps of:

providing a pair of discharge electrodes, an area between said pair of electrodes defining a gas discharge area;

coupling a first peaking capacitor to said pair of electrodes, said first capacitor configured to store charge;

coupling a second peaking capacitor and a resistor to one of said pair of electrodes, said second capacitor configured to store charge which is discharged through the discharge electrodes, and the load configured to dissipate energy transmitted through it as a result of a discharge in the gas discharge area; and

coupling a ground terminal to said first and second peaking capacitors;

wherein said pair of discharge electrodes, said first and second peaking capacitors and said resistor forming an electrical loop.

39. (Amended) An excimer or molecular fluorine laser, comprising:

a discharge chamber filled with a gas mixture including a halogen component, the discharge chamber also including a pair of main discharge electrodes;

a pulsed discharge circuit coupled to the pair of main discharge electrodes;

wherein the pulsed discharge circuit includes:

a main storage capacitor coupled to a pulse compression circuit;

a set of peaking capacitors coupled to the pulse compression circuit and the main discharge electrodes, such that a charge is transferred from the pulse compression circuit and then stored in the set of peaking capacitors and then discharged in the main discharge electrodes; and

a resistive component coupled to the set of peaking capacitors and the discharge electrodes, such that the resistive component dissipates energy transmitted through it as a result of a discharge between the main discharge electrodes.

40. (Amended) The laser of claim 39, further comprising a second set of peaking capacitors coupled to the pulse compression circuit and the main discharge electrodes.

41. (Amended) The laser of claim 40, wherein a first electrical connection between the first set of peaking capacitors and the main discharge electrodes has a different inherent inductance than a second electrical connection between the second set of peaking capacitors and the discharge electrodes.

50. (New) The discharge circuit of claim 1 wherein the capacitance and the load are in series.

51. (New) The discharge circuit of claim 1 wherein the capacitance and the load are in parallel.

52. (New) A pulsed gas laser system, comprising:
a laser tube including a first electrode and a second electrode and laser gas; and
a capacitance and a load coupled to the first electrode, wherein the capacitance is coupled to receive a charge from a pulse compression circuit, and to discharge the charge through the first and the second electrode, and wherein the load operates to dissipate streamers generated by a glow discharge of the laser tube, wherein the capacitance and the load are located out of the laser tube.

53. (New) The system of claim 52 further comprising a cooling apparatus which cools the load.

54. (New) The system of claim 52 wherein the load includes a resistor.

55. (New) The system of claim 54 wherein the resistor has a value comparable to a wave impedance of said discharge circuit.

56. (New) The system of claim 54 wherein the resistor has a value comparable to an active impedance of the gas discharge during a maximum discharge current phase.

57. (New) The system of claim 52 wherein the load is positioned in the pulsed power module.